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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/743,522 | 12/23/2003 | Takeshi Shibata | 04329.3210 | 7673 |

22852 7590 07/13/2006

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| EXAMINER | |
|---|---|
| NGUYEN, KHIEM D | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2823 | |

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/743,522 | SHIBATA ET AL. | |
| | Examiner | Art Unit | |
| | Khiem D. Nguyen | 2823 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *26 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) *29-34* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28 and 35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *04/26/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Information Disclosure Statement*

1. The Information Disclosure Statement filed on April 26th, 2006 has been considered.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

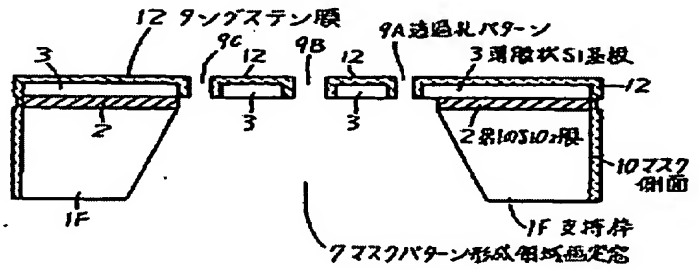
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-28 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Satoru et al. (Japan Publication 06-244091).

In re claim 1, **Satoru** discloses a stencil mask comprising: a conductive thin film **3** (Si) with openings 9A-C in the film;

【図１】

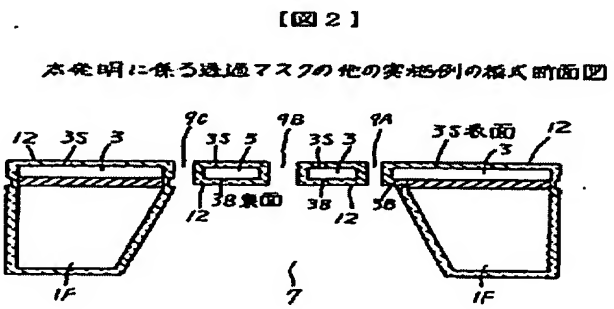
本発明に係る透過マスクの一実施例の模式断面図




an insulating film **2** ($SiO_2$) formed in a region of conductive thin film excluding the openings **9A-C** (Detailed Description, page 3, paragraph [0021] and FIG. 1);

a conductive support **1f** formed on the insulating film **2**; and

a conducting member **12** which is formed through the insulating film **2** in a part of the region and which connects the conductive support **1f** and the conductive thin film 3 electrically (Detailed Description, pages 3-4, paragraph [0022] and FIG. 2).




In re claim 2, **Satoru** discloses that the electrical conductivity of the conducting member **12** (W) is equal to or higher than that of each of the conductive thin film **3** (Si) and the conductive support **1f** (Si) (pages 3-4, paragraphs [0021]-[0022]).

In re claim 3, **Satoru** discloses that the conductive thin film **3** and the conductive support **1f** are made of silicon (page 3, paragraph [0022]).

In re claim 4, **Satoru** discloses that the conducting member **12** is made of tungsten (W) (page 3, paragraph [0022]).

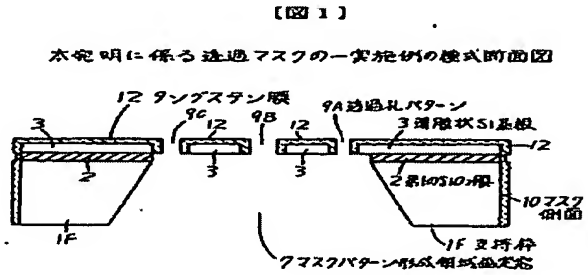
In re claim 5, **Satoru** discloses that the stencil mask according to claim 1, further comprising silicon or silicide formed on the surface of the conducting member (FIG. 2).

In re claim 6, **Satoru** discloses that the conducting member **12** is formed in the conductive support **1f** (FIG. 2).

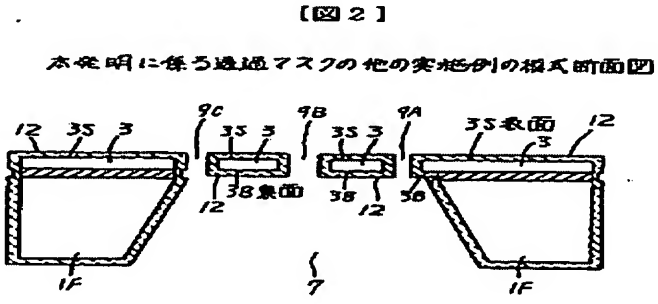
In re claim 7, **Satoru** discloses that the conducting member **12** is formed in the conductive thin film **3** (FIG. 2).

In re claim 8, **Satoru** discloses that the conducting member **12** is formed on and in the conductive thin film **3** (FIG. 2).

In re claim 9, **Satoru** discloses that a stencil mask comprising: a conductive thin film **3** (Si) having a first region (middle region) and a second region (peripheral region) outside the first region, the second region being outside the first region, and the first rgion including a plurality of first openings **9A-C**; an insulating film **2** ($SiO_2$) which is formed on the second region on a first side of the conductive thin film **3** (Detailed Description, page 3, paragraph [0021] and FIG. 1);



a conductive support **1f** which is formed on the insulating film **2**; a second opening **7** which is formed through the conductive support **1f** and the insulating film **2** in a part of the second region; and a conducting member **12** which is provided in the second opening **7** and which connects the conductive thin film **3** and the conductive support 1f electrically (Detailed Description, pages 3-4, paragraph [0022] and FIG. 2).



In re claim 10, **Satoru** discloses that the electrical conductivity of the conducting member **12** (W) is equal to or higher than that of each of the conductive thin film **3** (Si) and the conductive support **1f** (Si) (pages 3-4, paragraphs [0021]-[0022]).

In re claim 11, **Satoru** discloses that the conductive thin film **3** and the conductive support **1f** are made of silicon (page 3, paragraph [0022]).

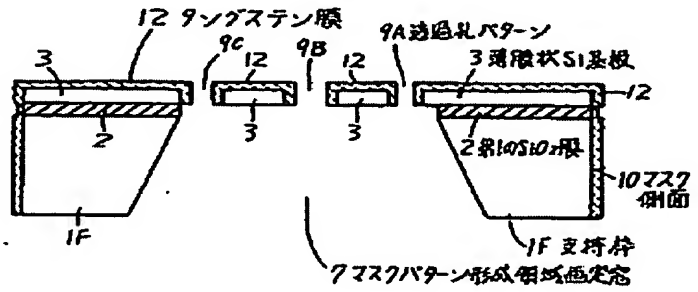
In re claim 12, **Satoru** discloses that the conducting member **12** is made of tungsten (W) (page 3, paragraph [0022]).

In re claim 13, **Satoru** discloses that the stencil mask according to claim 9, further comprising silicon or silicide formed on the surface of the conducting member (FIG. 2).

In re claim 14, **Satoru** discloses a stencil mask comprising: a conductive thin film **3** (Si) having a first region (middle region) and a second region (peripheral region), the first region including a plurality of first openings **9A-C**; an insulating film **2** formed on the second region of the conductive thin film **3** (Detailed Description, page 3, paragraph [0021] and FIG. 1);

【図１】

本発明に係る透過マスクの一実施例の模式断面図

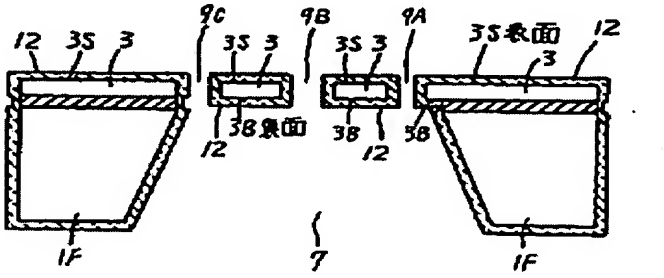



a conductive support **1f** formed on the insulating film **2**; a second opening **7** formed in the conductive thin film **3** and the insulating film **2** in a part of the second

region; and a conducting member **12** which is formed in the second opening **7** and which connects the conductive thin film **3** and the conductive support **1f** electrically (pages 3-4, paragraph [0022] and FIG. 2).

【図２】

本発明に係る透過マスクの他の実施例の模式断面図




In re claim 15, **Satoru** discloses that the electrical conductivity of the conducting member **12** (W) is higher than that of each of the conductive thin film **3** (Si) and the conductive support **1f** (Si) (Detailed Description, pages 3-4, paragraphs [0021]-[0022]).

In re claim 16, **Satoru** discloses that the conductive thin film **3** and the conductive support **1f** are made of silicon (Detailed Description, page, paragraph [0022]).

In re claim 17, **Satoru** discloses that the conducting member **12** is made of tungsten (Detailed Description, page 3, paragraph [0022]).

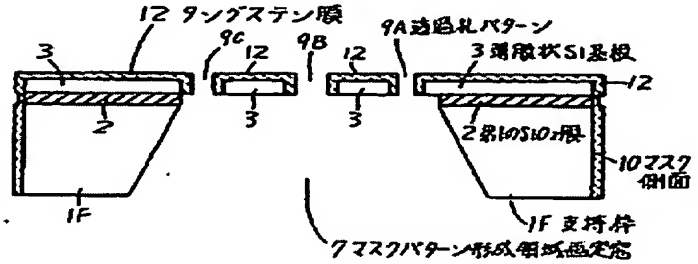
In re claim 18, **Satoru** discloses that the stencil mask according to claim 14, further comprising silicon or silicide formed on the surface of the conducting member (FIG. 2).

In re claim 19, **Satoru** discloses a stencil mask comprising: a conductive thin film **3** (Si) having a first region (middle region) and a second region (peripheral region), the

first region including a plurality of first openings **9A-C**; an insulating film **2** formed on the second region (Detailed Description, page 3, paragraph [0021] and FIG. 1);

【図１】

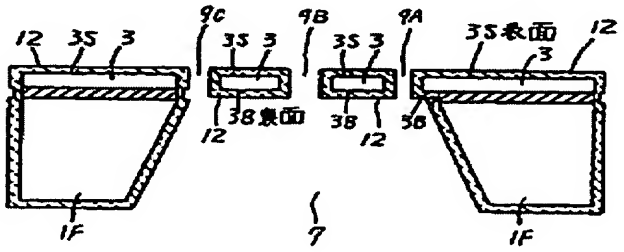
本発明に係る透過マスクの一実施例の模式断面図




a conductive support **1f** formed on the insulating film **2**; a second opening **7** formed in the conductive thin film **3** and the insulating film **2** in a part of the second region; and a conducting member **12** which is formed on the surface of the conductive thin film **3** and in the second opening **7** and which connects the conductive thin film **3** and the conductive support **1f** electrically (Detailed Description, pages 3-4, paragraph [0022] and FIG. 2).

【図２】

本発明に係る透過マスクの他の実施例の模式断面図



In re claim 20, **Satoru** discloses that the electrical conductivity of the conducting member **12** (W) is higher than that of each of the conductive thin film **3** (Si) and the conductive support **1f** (Si) (Detailed Description, pages 3-4, paragraphs [0021]-[0022]).

In re claim 21, **Satoru** discloses that the conductive thin film **3** and the conductive support **1f** are made of silicon (Detailed Description, page 3 paragraph [0022]).

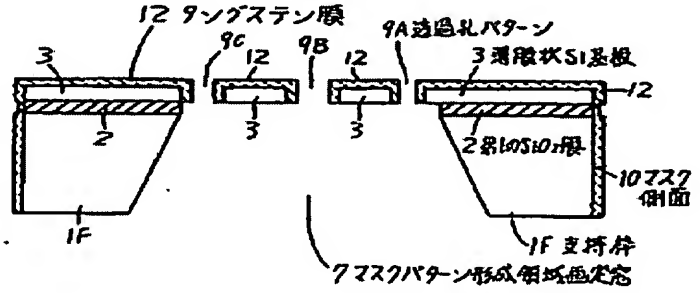
In re claim 22, **Satoru** discloses that the conducting member is made of tungsten (Detailed Description, page 3, paragraph [0022]).

In re claim 23, **Satoru** discloses that the stencil mask according to claim 19, further comprising silicon or silicide formed on the surface of the conducting member (FIG. 2).

In re claim 24, **Satoru** discloses a mask forming substrate comprising: a conductive thin film **3** (Si) having a first region (middle region) and a second region (peripheral region); the second region being outside of the first region; an insulating film **2** ($SiO_2$) formed on the conductive thin film **3** (Detailed Description, page 3, paragraph [0021] and FIG. 1);

【図１】

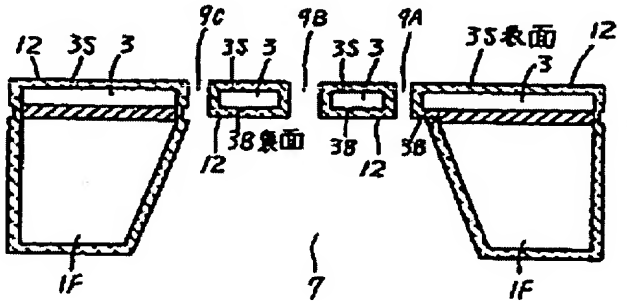
本発明に係る透過マスクの一実施例の模式断面図



a conductive support **1f** formed on the insulating film **2**; an opening **7** formed in the conductive support **1f** and a third region of the insulating film **2** corresponding to a part of the second region; and a conducting member **12** which is formed in the opening **7** and which connects the conductive thin film **3** and the conductive support **1f** electrically (Detailed Description, pages 3-4, paragraph [0022] and FIG. 2).

【図２】

本発明に係る透過マスクの他の実施例の模式断面図




In re claim 25, **Satoru** discloses that the electrical conductivity of the conducting member **12** (W) is higher than that of each of the conductive thin film **3** (Si) and the conductive support **1f** (Si) (Detailed Description, pages 3-4, paragraphs [0021]-[0022]).

In re claim 26, **Satoru** discloses that the conductive thin film **3** and the conductive support 1f are made of silicon (Detailed Description, page 3, paragraph [0021]).

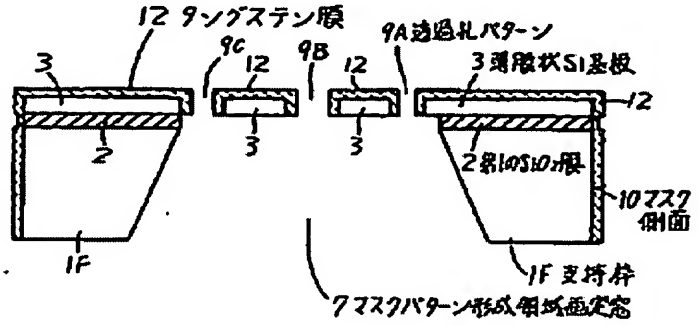
In re claim 27, **Satoru** discloses that the conducting member **12** is made of tungsten (W) (Detailed Description, page 3, paragraph [0022]).

In re claim 28, **Satoru** discloses a mask forming substrate comprising: a conductive thin film **3** (Si) having a first region (middle region) and a second region (peripheral region), the second region being outside of the first region; an insulating film

**2** ($SiO_2$) formed on the conductive thin film **3**; a conductive support **1f** formed on the insulating film **2** (Detailed Description, page 3, paragraph [0021] and FIG. 1);

【図１】

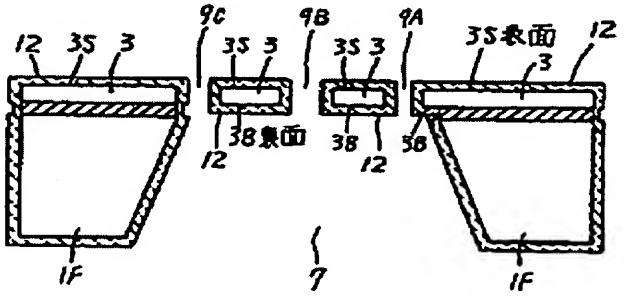
本発明に係る透過マスクの一実施例の模式断面図




an opening 7 formed in the conductive thin film **3** and the insulating film **2** corresponding to a part of the second region; and a conducting member **12** which is formed on the conductive thin film **3** and in the opening **7** and which connects the conductive thin film **3** and the conductive support **1f** electrically (Detailed Description, pages 3-4, paragraph [0022] and FIG. 2).

【図２】

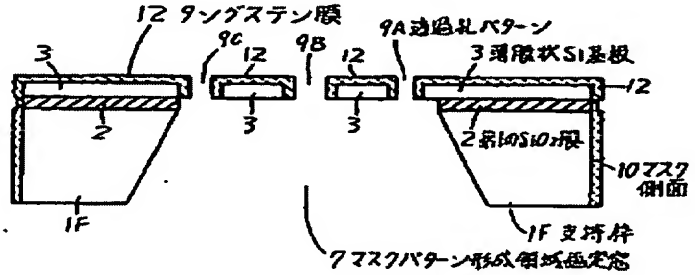
本発明に係る透過マスクの他の実施例の模式断面図



In re claim 35, **Satoru** discloses a mask forming substrate comprising: a conductive thin film **3** (Si) having a first region (middle region) and a second region (peripheral region), the second region being outside of the first region; an insulating film **2** ($SiO_2$) formed on the conductive thin film **3** (Detailed Description, page 3, paragraph [0021] and FIG. 1);

【図１】

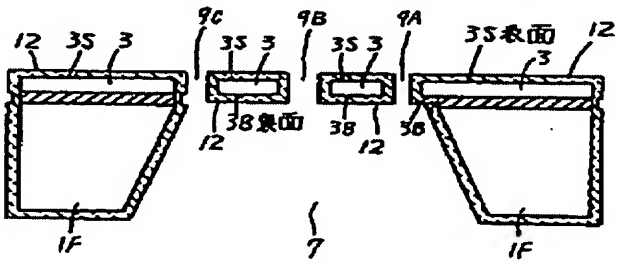
本発明に係る透過マスクの一実施例の模式断面図




a conductive support **1f** formed on the insulating film **2**; an opening **7** formed in the conductive thin film **3** corresponding to a part of the second region and the insulating film **2**; and a conductive member **12** which is formed in the opening **7** and which connects the conductive thin film **3** and the conductive support **1f** electrically (Detailed Description, pages 3-4, paragraph [0022] and FIG. 2).

【図２】

本発明に係る透過マスクの他の実施例の模式断面図



***Response to Applicants' Amendment and Arguments***

4. Applicants' arguments filed April 26th, 2006 have been fully considered but they are not persuasive.

Applicants contend that the reference Satoru et al. (Japanese Publication 06-244091), herein known as Satoru, does not disclose at least Applicants' claimed "a conducting member which is formed through the insulating film in a part of the region and which connects the conductive support and the conductive thin film electrically".

In response to Applicants' contention that Satoru does not teach or suggest "a conducting member which is formed through the insulating film in a part of the region and which connects the conductive support and the conductive thin film electrically", Examiner respectfully disagrees. Applicants are directed to pages 3-4, paragraphs [0021]-[0024] and FIGS. 2 and 3, where Satoru discloses that a conducting member 12 made of tungsten which is formed through the insulating film 2 ($SiO_2$) in a part of the region and which connects the conductive support 1F and the conductive thin film 3 electrically. As shown in FIG. 2 and paragraph [0024] of Satoru, the conducting member 12 is formed through the insulating film 2 and placed on the rear-face 3B and also covers the mask side face 10, thus, electrically connects the conductive support 1F to the conductive thin film 3.

In response to Applicants' contention that Satoru does not disclose Applicants' claimed "second opening formed through the conductive support and the insulating film in a part of the second region", Examiner respectfully disagrees. Applicants are directed to pages 3-4, paragraphs [0021]-[0024] and FIGS. 2 and 3, where Satoru discloses that a

conductive support 1F which is formed on the insulating film 2; a second opening 7 which is formed through the conductive support 1F and the insulating film 2 in a part of the second region; and a conducting member 12 made of tungsten which is provided in the second opening 7 formed through the insulating film 2 ($SiO_2$) in a part of the region and which connects the conductive support 1F and the conductive thin film 3 electrically. As shown in FIG. 2 and paragraph [0024] of Satoru, the conducting member 12 is formed along the sidewalls inside the second opening 7 and through the insulating film 2 and placed on the rear-face 3B and also covers the mask side face 10, thus, electrically connects the conductive support 1F to the conductive thin film 3.

In response to Applicants' contention that Satoru does not disclose Applicants' claimed "second opening formed in the conductive thin film and the insulating film in a part of the second region and that a conducting member is formed in the second opening", Examiner respectfully disagrees. As clearly shown in FIG. 2 by Satoru, second opening 9A is formed in the conductive thin film 3 and the insulating film 2 in a part of the second region, and that the tungsten film 12 is formed in the second opening 9A at rear-face 3B and which connects the conductive thin film 3 and the conductive support 1F electrically.

For these reasons, Examiner holds the rejection proper.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D. Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:30 AM - 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K.N.
July 05, 2006

MATTHEW SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800